

cise data as to the occurrence of heritable variations and their accumulation through selection, when sufficiently long continued. And this can hardly fail to have influence on the conception of the hereditary constitution or *genotype* as a fixed thing, changing only discontinuously by marked steps or mutations, that do not intergrade.

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HEREDITARY ANCHYLOSIS OF THE PROXIMAL PHALAN- GEAL JOINTS (SYMPHALANGISM)

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Presented to the Academy, October 30, 1915

There are many recognized forms of congenital malformations of the hands and feet. Walker in 1901 first described the type of deformity which is made the subject of this study, and showed that the condition had been transmitted through five generations, though the number of his recorded cases was too small to justify a definite conclusion on a Mendelian basis. Farabee in 1905, and Drinkwater in 1908, showed that another type of deformity of the hands, known as brachydactylism, was a dominant unit-character, transmitted in accordance with the Mendelian law.

The lesion in the condition under discussion consists of a congenital ankylosis, due apparently to the failure of formation of the joint between

the proximal and middle row of phalanges. One or more, often all of the fingers are involved. The resulting deformity is known in the community as 'stiff fingers,' in contradistinction to the normal which are called 'crooked fingers.' This condition has been transmitted through seven generations, the progenitor of the family having migrated from Scotland to Virginia in 1700. There are connections of the family still in Scotland who carry the trait.

In the Virginia branch, which has been made the object of this statistical study, record has been secured of 312 descendants, among whom there were 84 affected persons, a few more than the 25% of the total number which would be expected. Excluding the incomplete families of the first three generations, in which were recorded few other than the affected persons carrying the trait, there are 72 completed families comprising 302 individuals. Of these 72 completed families, 44 of them were from the mating of unaffected parents with 152 unaffected children. Of the 28 families in which there was an affected parent, there were 150 children, 78 of them, or 52%, carrying the trait. It has been observed that the trait may be transmitted in outspoken form by a parent in whom it is inconspicuous, though never by an unaffected parent. The trait moreover is transmissible by either sex, and both hands and feet of the affected individuals may be involved.

The character, in short, behaves as a simple Mendelian dominant, with equal chance, among the offspring of affected individuals, that it will be or will not be inherited.

This paper will appear in full with photographs and charts in a forthcoming number of *Genetics*.

THE RELATIVE STIMULATING EFFICIENCY OF SPECTRAL COLORS FOR THE LOWER ORGANISMS

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Presented to the Academy, November 10, 1915

The relation between color and reactions in organisms has for many years been a prominent problem in the study of behavior. The earlier investigators (Bert, Lubbock, Romanes, Graber and others) were interested in this problem largely from the point of view of comparative psychology. Their aim was to ascertain the relation between color-vision in man and in the various animals with the hope of thus elucidating the evolution of psychic phenomena.

Loeb studied the reaction to colors in plants and in animals for the